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ABSTRACT

The Minnesota Multiphasic Personality Inventory (MMPI) has been widely used as an objective personality test, in addition to being used in forensic assessments, especially involving claims of physical or emotional damage. It now appears that questions must be raised concerning the MMPI's forensic implications given the advent of new disease entities, in addition to prolonged trans-cutaneous, and/or inhalant exposure to environmental pollutants or neurotoxic chemicals in the workplace. (Author)

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NEUROTOXIN EXPOSURE AND MMPI FORENSIC IMPLICATIONS

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Abstract

The MMPI has been widely used as an objective personality test, in addition to being used in forensic assessments, especially involving claims of physical or emotional damage. It now appears that questions must be raised concerning the MMPI's forensic implications given the advent of new disease entities, in addition to prolonged trans-cutaneous and/or inhalant exposure to environmental pollutants or neurotoxic chemicals in the workplace.

NEUROTOXIN EXPOSURE AND MMPI FORENSIC IMPLICATIONS

The Minnesota Multiphasic Personality Inventory (MMPI) is the most widely used objective personality test in the world. Practitioners have long used the MMPI in screening patients for mental disorders and as a tool to aid in the diagnosis of psychopathology (Friedman, Webb, & Lewak, 1989). The use of the MMPI for this purpose is being called into question, given the effects of trans-cutaneous and/or inhalant exposure to environmental pollutants and chemicals in the workplace by those who eventually develop *Multiple Chemical Sensitivity Syndrome* (*MCS*). Many of these sufferers are unable to use any household cleansing agents and exhibit severe physiological responses to environmental pollutants, such as auto or bus exhaust emissions.

Most classical MMPI interpretive literature indicates that an elevated neurotic triad strongly suggests somatoform disorders, primarily due to persons responding to the test in such a way that implies "multiple organ system" problems. It is now known that many disease entities physicians do not routinely suspect or assess can indeed involve multiple organ systems (i.e., Lyme's Disease, producing a rash, fever, and possibly arthritis; Chronic Fatigue Syndrome, producing headache, fever, concentration problems, and weakness; HIV/AIDS; and toxic and neurotoxic exposures). Tentoni (1993) suggests there may be some validity problems in using the classical "conversion V" of the MMPI neurotic triad (Scales *1- Hs* and *3-Hy* higher

than Scale *2-D*) since a high intercorrelation exists between Scales *1* and *3* due to those scales being comprised of items common to both.

Bowler et al., (1991), studied the psychiatric disturbances of 70 women with multiple health problems who had previously worked with organic solvents in a microelectronics assembly plant. They found that MMPI profiles of 85.7% of the subjects exhibited abnormally high clinical elevations with four clinical diagnostic groups: somatoform (24.3%), depression (15.7%), anxiety (28.6%), and psychotic (11.3%). Some of the workers whose MMPI profiles were analyzed did not only show elevations on the neurotic reaction scales of *Hs*, *D*, *Hy*, and *Pt*, but also on the *Sc* and *Pa* subscales.

Affective and personality changes have been reported as early signs of organic solvent toxicity (Baker & Fine, 1986; Johnson, 1987). For instance, exposure to chlorine dioxide, a cleaning and disinfecting agent, symptoms include: shortness of breath, rapid heart beat, chest tightness, headaches, and hypersensation to virtually any chemical. However, in a recent forensic case (Tentoni, 1993), seven women were examined by three physicians, including their own personal physician, a physician appointed by their attorney, and a physician appointed by the defense attorney. All of these women were found to have *MCS* by three independent physicians. However, the MMPI profiles suggested these women were experiencing somatoform disorders. The women experienced all the aforementioned symptoms associated with chlorine dioxide exposure, but also depression and anticipatory anxiety.

Defense psychologists opined that rather than affective or personality disturbances, these women were experiencing a mass psychogenic hysteria.

Frequently, it is not possible to determine whether the affective or personality disturbances are organic or are the result of exposure to a neurotoxin. If a neurotoxic exposure has occurred, an organic cause needs to be considered in the clinical diagnosis. It is erroneous to diagnose someone as experiencing a post-traumatic stress disorder, somatoform disorder, anxiety disorder, or depression, when the person may be suffering from an organic mood, organic anxiety, or an organic personality disorder (Bowler et al., 1991). These diagnoses need to be considered when drawing any conclusions from MMPI data, especially given the strong reliance upon a number of commercially available computerized scoring systems of the MMPI used for forensic purposes. These computerized scoring systems cause particular problems because of the unrevealed algorithmic processes used to generate their interpretive narratives, once again causing validity problems for the MMPI.

Bowler et al., (1989) suggests that the MMPI be used very broadly in occupational medicine in order to identify and treat personality effects deriving from exposure to workplace neurotoxins. The authors also suggest that the MMPI is useful in documenting personality dysfunction resulting from occupational or environmental neurotoxin exposure for use in litigation. However, serious questions must be raised as to the MMPI's validity in proving the existence of "psychic injuries". Psychologists using the MMPI in forensic settings need to be more thorough in examining the medical records

of individuals claiming exposure to neurotoxins in order to account for the MMPI findings.

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